

WHAT IS CLAIMED IS:

1. A bicycle crank assembly comprising:

a crank shaft including first and second portions with the second portion being positioned on a right side of the first portion and having a larger diameter than the first portion; and

a right crank including a sprocket mounting part including a plurality of arm parts configured and arranged to support at least one sprocket, a crank arm part formed integrally with the sprocket mounting part and extending in a radial direction from a first surface of the sprocket mounting part, and a crank shaft engagement bore formed in a center of a second surface located on an opposite side of the sprocket mounting part as the first surface,

the right crank being crimp-fastened to the crank shaft by installing the second portion of the crank shaft into the engagement bore such that a gap is formed between the first portion and the engagement bore, and pressing the periphery of the engagement bore from the second surface toward the first surface in the axial direction of the crank shaft such that a pressed portion bulges radially inward and an annular space is formed between the crank shaft and the engagement bore.

2. The bicycle crank assembly as recited in claim 1, wherein

the annular space defines an end face that is recessed from the second surface toward the first surface.

3. The bicycle crank assembly as recited in claim 1, further comprising

a seal member is disposed between a radially inward-facing surface of the annular space and a radially outward-facing surface of the first portion.

4. The bicycle crank assembly as recited in claim 1, wherein

the engagement bore has an axial length that is shorter than the diameter of the second portion.

5. A bicycle crank assembly comprising:

a crank shaft including first and second portions with the second portion being positioned closely adjacent to the first portion and having a larger diameter than the first portion; and

a crank having a pedal mounting part provided on a tip end thereof and an engagement bore formed in a base end thereof, the engagement bore having an axial length that is shorter than the diameter of the second portion, the engagement bore being crimp-fastened to the second portion of the crank shaft.

6. The bicycle crank assembly as recited in claim 5, wherein
the crank is a right crank provided with a sprocket mounting part having a plurality of arms configured to support one or more sprockets, and a crank arm part formed integrally with the sprocket mounting part and extending in a radial direction from a first surface of the sprocket mounting part; and
the engagement bore is formed in a center of a second surface located on an opposite side of the sprocket mounting part as the first surface.

7. The bicycle crank assembly as recited in claim 5, wherein
the crank is crimp-fastened by installing the second portion of the crank shaft into the engagement bore such that a gap is formed between the first portion and the engagement bore, and pressing a periphery of the engagement bore outwardly in the axial direction of the crank shaft such that a pressed portion bulges radially inward.

8. The bicycle crank assembly as recited in claim 5, wherein
the crank shaft includes a hollow portion located where the right crank is mounted thereto, the crank shaft is configured and arranged to be supported in a freely rotatable manner at both axially-facing ends of a hanger by bearing assemblies installed in the hanger.

9. The bicycle crank assembly as recited in claim 8, wherein
the hollow portion of the crank shaft extends an entire length of the crank shaft.

10. The bicycle crank assembly as recited in claim 5, wherein
a radially outward-facing surface of the second portion has a plurality of first undulations that are spaced in a circumferential direction of the crank shaft; and
the engagement bore has a plurality of second undulations that are spaced in a circumferential direction of the engagement bore, the first and second undulations

being mesh together in such a manner that the crank cannot rotate relative to the crank shaft.

11. The bicycle crank assembly as recited in claim 10, wherein the first undulations and second undulations each include positioning undulations in two different circumferential spaced locations.

12. The bicycle crank assembly as recited in claim 5, wherein the second portion of the crank shaft has a first length in the axial direction; and
the engagement bore has a second length that is longer than the first length and extends almost to the first surface.

13. The bicycle crank assembly as recited in claim 12, wherein the engagement bore is a blind bore such that a hole for mounting the crank shaft is not provided in the first surface of the sprocket mounting part.

14. The bicycle crank assembly as recited in claim 5, wherein the second portion of the crank shaft has a first length in the axial direction; and
the engagement bore has a second length that is longer than the first length and passes through the first surface.

15. The bicycle crank assembly as recited in claim 14, further comprising a lid member covering the opening in the first surface.

16. The bicycle crank assembly as recited in claim 5, wherein the pressed portion of the crank is formed by first and second alternating spacings that alternate relative to one another in a circumferential direction to form alternating pressed portions have different axial lengths.

17. The bicycle crank assembly as recited in claim 6, wherein

a left crank is mounted in a non-rotatable manner to a left end of the first portion such that its crank arm part is rotationally 180 degrees out of phase with respect to the crank arm part of the crank.